Connecting PV Prosumers and Distribution System Operators: how can we make benefit BOTH?

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What are the Needs of DSOs and Prosumers?

<u>DSO</u>

Constant revenue

Load and production within boundaries

Constant grid extension

<u>Prosumer</u>

Social acceptable prices, polluter-pays

Ensured volatile load and production

Future power needs should be considered

Can offer flexibility, as long all needs are fulfilled

<u>Climate targets</u>

Renewable energy sources expansion
→ Profitable Renewables

(New) storage technologies

Demand side management

Cost components for Electricity

Electricity costs = Energy costs + Grid tariffs + taxes and fees

Tariff component	Effect of high component prices
Energy component [€/kWh]	+ Increases energy efficiency + Local generation more profitable + Compensates energy costs - Decreases integration of high renewable production (e.g. wind)
Fix costs [€/y]	+ Compensates grid costs - Social questionable for low consumers
Power component [€/kW]	+ Reduces Peak procurement (and -production) - Decreases integration of high renewable production (e.g. wind)

Residential electricity costs in selected countries

Electricity costs = Energy costs + Grid tariffs + taxes and fees

Recommendations / Discussion
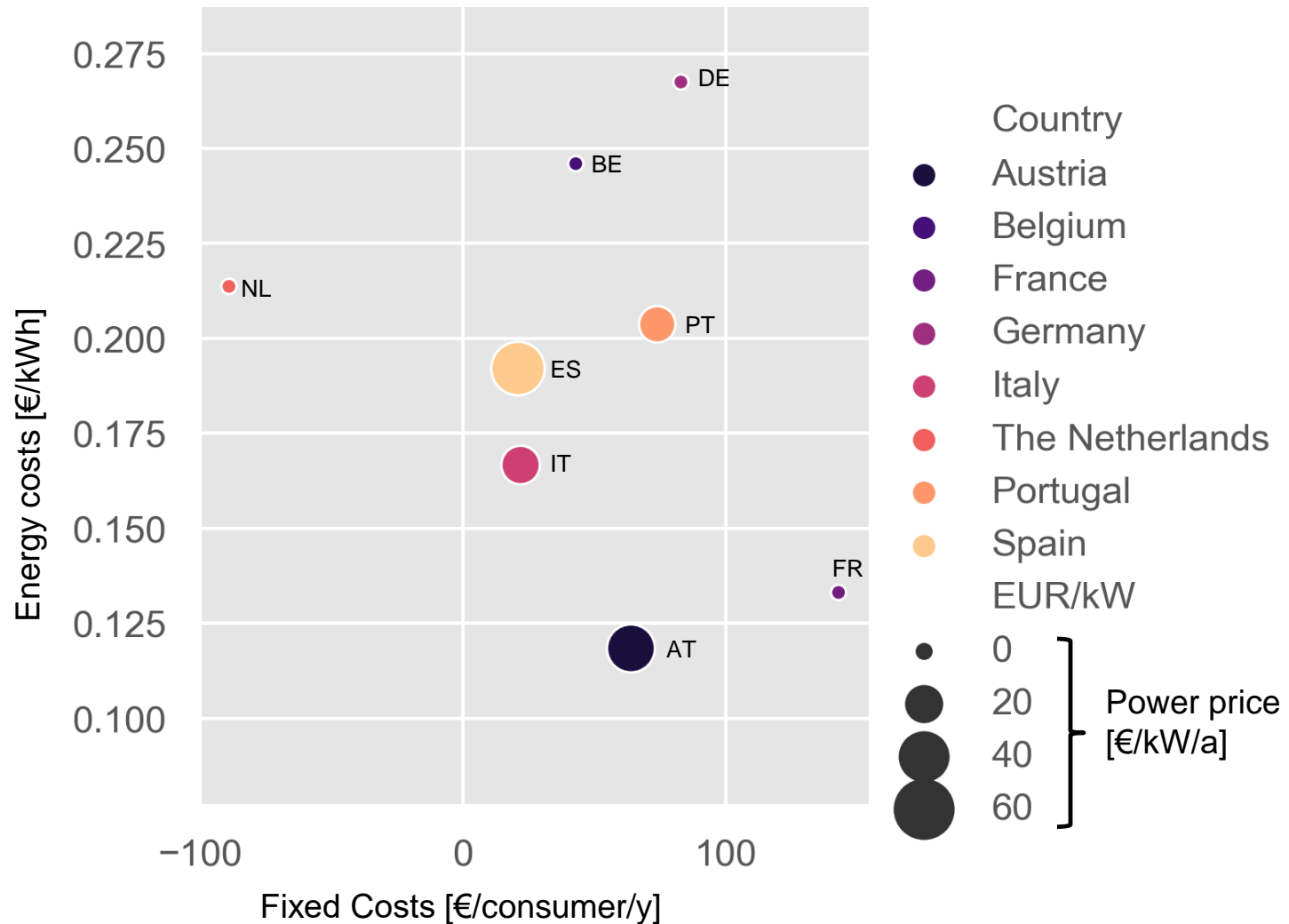
PV is already profitable in many cases:

- Incentives where PV is not profitable

Even though PV is profitable, it is not built:

- Mandatory PV for new buildings (or land-use)
- Adoption of ownership rights in apartment buildings

Enable Demand Side Management and let Prosumers contribute:

- Introduction of flexible Grid Tariff Design?

    E.g. time dependent power pricing [€/kW(t)]

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